Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-16 (CANCELLED)

17. (ORIGINAL) A nucleic acid probe which can detect the length of a telomerase gene fragment, wherein the length of the fragment determines the capability of a telomerase gene sequence to encode a functional telomerase RNA component.

18. (ORIGINAL) A DNA construct comprising DNA encoding exogenous DNA between the 3.3 kb *Xba*I fragment of the 5' end of the mouse telomerase RNA component gene and the 4.0 kb *Xho*I fragment of the 3' end of the mouse telomerase RNA component gene.

19. (ORIGINAL) The construct of Claim 18 wherein the exogenous DNA is a marker gene sequence.

20. (ORIGINAL) The construct of Claim 18 wherein the marker sequence is a neomycin resistance gene.

21. (ORIGINAL) The construct of Claim 18 further comprising a promoter.

22. (ORIGINAL) The construct of Claim 21 wherein the promoter is an inducible promoter.

23. (ORIGINAL) The construct of Claim 22 wherein the inducible promoter is a tetracycline-responsive cytomegalovirue promoter.

24. (ORIGINAL) A mouse embryonic stem cell containing the DNA construct of Claim 18.

25. (ORIGINAL) A plasmid comprising pPNT-mTRA or its functional equivalent.

26-32 (CAN CELLED)

33. (ORIGINAL)A method for identifying nucleic acid sequences that are potentially involved in cell reprogramming comprising the following steps:

(i) Contacting nuclei derived from isolated nuclei derived from differentiated cells with cytoplasm or cytoplasm fractions derived from an oocyte, blastomere or embryonic stem cell; and

(ii) Identifying what RNAs are released from said nuclei after said contacting

34. (ORIGINAL) The method of Claim 33 wherein said identifying is effected by PCR.

35. (ORIGINAL) A method for identifying RNAs that are involved in cell reprogramming comprising:

(1) adding the nucleus of a differentiated cell to an enucleated oocyte or cytoplasm thereof;

(2) isolating RNAs therefrom; and

(3) effecting subtractive hybridization by subtracting said RNAs with RNAs obtained from said differentiated cell in order to identify mRNAs that are released by the cell nucleus as a result of reprogramming.

36-53 (CANCELLED)

54. (NEW) An *in vitro* method for reprogramming and/or de-differentiating a somatic cell or a somatic cell nucleus consisting essentially of contacting said somatic cell or nucleus thereof with an effective amount of cytoplasmic or cytoplasmic extract derived from cells or cells which are in a less differentiated state then said somatic cell.

55. (NEW) The method of claim 54 wherein said somatic cell or somatic cell nucleus is a mammalian somatic call or nucleus thereof.

56. (NEW) The method of claim 55 wherein said somatic call is selected from the group consisting of cardiac, lung, skin, liver, stomach, intestine, neural, muscle, bone, cartilage, immune, pancreatic, spleen, esophagus and corneal cells.

57. (NEW) The method of claim 55 wherein said mammalian somatic cell or nucleus is a human somatic cell or nucleus thereof.

58. (NEW) The method of claim 56 wherein said mammalian cell or nucleus is a human somatic cell or nucleus thereof.

59. (NEW) The method of claim 54 wherein said somatic cell nucleus is genetically modified prior, concurrent or subsequent to said somatic cell nucleus being reprogrammed.

60. (NEW) The method of claim 54 wherein the cytoplasmic extract is derived from an oocyte, inner cell mass cell, embryonic stem cell, or other embryonic cell.

61. (NEW) The method of claim 55 wherein the mammalian somatic cell is a non-human primatic, human, rat, guinea pig, mouse, rabbit, dog, cat, hamster, goat, cattle, sheep, horse, bison or buffalo somatic cell.

62. (NEW) The method of claim 54 wherein the cytoplasmic extract is derived from an oocyte or embryonic cell of the same species as the somatic cell or somatic cell nucleus.

63. (NEW) The method of claim 57 wherein the cytoplasmic extract is derived from an oocyte or embryonic cell of a different species as the somatic cell or somatic cell nucleus.

64. (NEW) The method of claim 54 wherein said cytoplasmic extract is transplanted in the said somatic cell.

65. (NEW) The method of claim 54 wherein said somatic cell or somatic cell nucleus is reprogrammed by placing said somatic cell or nucleus into a solution containing a cytoplasmic extract derived from a cell or cells which are in a less differentiated state relative to said somatic cell.

66. (NEW) The method of claim 65 wherein said less differentiated cell is an oocyte, blastomere, embryonic stem cell, or another embryonic cell type.

67. (NEW) The method of claim 54 wherein said somatic cell or somatic cell nucleus has been genetically modified by the addition of a DNA construct that results in the expression of telomerase.

68. (NEW) The method of claim 67 wherein the DNA construct comprises a DNA encoding telomerase under the control of a regulatable promoter.

69. (NEW) The method of claim 54 wherein the cytoplasmic extract is introduced into said somatic cell via microinjection or a liposomal delivery system.

70. (NEW) The method of claim 54 wherein said somatic cell nucleus is reprogrammed by contacting with a cytoplasm containing extract obtained from undifferentiated cells.

71. (NEW) The method of claim 70 wherein said somatic cell is sectioned from the group consisting of epithelial, endothelial, fibroblast, Keratinocyte, Melanocyte, muscle, bone, immune cell, B lymphocyte, T lymphocyte, oligodendrocyte, dendritic, erythrocyte, lung, liver, pancreas, neural, stomach, intestine, esophageal, cardiac, spleen, bladder, thymus, and corneal cell.

72. (NEW) The method of claim 54 wherein the somatic cell or somatic cell nucleus is at or near senescence prior to contacting with said cytoplasmic extract.